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14. ABSTRACT

Hill Air Force Base (AFB) proposes to provide an improved staging building in which seats and canopies from F-22 aircraft can be safely and efficiently stored while the aircraft are being repaired. The findings of this EA indicate that the proposed action would not have significant adverse effects on the human environment or any of the environmental resources as described in the EA. Therefore, it is concluded that a Finding of No Significant Impact is justified.

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Environmental Assessment
Hill Air Force Base

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Hill Air Force Base, Utah

Final

Environmental Assessment:

Proposed Seat and Canopy Staging Building,

Hill Air Force Base, Utah

March 25, 2010

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Environmental Assessment (EA): Proposed Seat and Canopy Staging Building, Hill Air Force Base, Utah

Contract F42650-03-D-0007, Delivery Order #0033

Department of the Air Force
Air Force Materiel Command
Hill Air Force Base, Utah 84056

March 25, 2010

Prepared in accordance with the Department of the Air Force Environmental Impact Analysis Process (EIAP) 32 CFR Part 989, Effective July 6, 1999, which implements the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) regulations.

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EXECUTIVE SUMMARY

Purpose and Need

The purpose of the proposed action is to provide an improved staging building in which seats and canopies from F-22 aircraft can be safely and efficiently stored while the aircraft are being repaired.

The proposed action is needed to accommodate current and future F-22 workloads assigned to Hill Air Force Base (AFB) aircraft maintenance squadrons. There is no existing building in the vicinity of the F-22 maintenance activities that can provide the required storage space. Seats and canopies are currently staged in Hill AFB Buildings 223 and 236, across the runway. Bringing maintenance and storage facilities all into the same vicinity would improve base safety, increase efficiency, and reduce work flow time by consolidating F-22 operations in a single location, closer to existing F-22 maintenance facilities.

Scope of Review

During a scoping meeting and subsequent interactions, the following environmental issues were addressed:

- air quality,
- solid and hazardous wastes (including liquid waste streams),
- biological resources,
- geology and surface soils,
- water quality,
- cultural resources,
- occupational safety and health,
- air installation compatible use zone (AICUZ), and
- socioeconomic resources.

As explained in the body of this document, the issues that were identified for detailed consideration are: air quality, solid and hazardous wastes (including liquid waste streams), biological resources, and water quality.

Selection Criteria

The building that provides F-22 seat and canopy staging capabilities on Hill AFB should:

- provide a minimum of 2,500 square feet of storage space to accommodate seats and canopies for current and future F-22 workloads;
- have 210 feet of available clearance from other structures due to explosive clear zone (ECZ) standards (related to ejection seat and canopy explosive charges);
- do not conflict with establishing a possible future runway (east of the existing runway);
- do not degrade the function of existing radar systems;
- be located in close proximity to existing F-22 maintenance facilities

  - for public safety, eliminate risk to occupants of privately-owned vehicles from colliding with military vehicles transporting explosives
  - for efficiency, be in close proximity to F-22 maintenance facilities and existing utilities; and
- be protective of facilities, human health, and the environment.

Alternatives Considered in Detail

Alternative A (No Action Alternative) - Under the no action alternative, the seat and canopy staging building would not be constructed. Seats and canopies for F-22 aircraft would be staged in Buildings 223 and 236, across the runway. Undesirable safety, efficiency, and work flow time issues would exist.

Alternative B (Proposed Action - Construct a Seat and Canopy Staging Building) - The proposed seat and canopy staging building would be located east of the Hill AFB runway. The components of the proposed action would include:

- constructing a single story, steel frame warehouse style structure in the size range of 2,500 to 3,200 square feet. The concrete slab on grade building would have metal sides with partial masonry block veneer, a pitched standing seam metal roof, a grounding and lightning protection system, overhead lights, a fire suppression system (water only), and forced air heat sufficient to protect the fire suppression system during winter months;
- connecting to existing buried utilities consisting of water, natural gas, electricity, and storm drains;
- providing paved access for delivery and emergency vehicles; and
- disturbing less than one acre of land area.

Decisions That Must Be Made

Hill AFB must decide whether to:

- not provide a seat and canopy staging building (no action), or
- construct a seat and canopy staging building.
- If the decision is to provide a seat and canopy staging building, then a decision must be made as to where the facility will be located.

If Hill AFB decides to construct a seat and canopy staging building, the proponent and environmental managers would comply with the best management practices indicated in this environmental assessment. Further, within 90 days of a written decision pursuant to this environmental assessment, the proponent and environmental managers would then decide what additional plans and measures, if any, should be implemented.

Results of the Environmental Assessment

Alternatives A and B were considered in detail. The results of the environmental assessment are summarized in the following table.

Summary Comparison of Alternatives

Issue	Alternative A No Action	Alternative B Proposed Action
Air Quality	No new effects. However, negative effects on air quality would continue, due to emissions from the trucks hauling the seats and canopies back and forth across the runway.	Construction equipment would create temporary emissions. Fugitive dust emissions would be controlled. Air emissions from the natural gas fired furnace would 0.1 tons per year or less for each criteria pollutant and for hazardous air pollutants (HAPs).
Solid and Hazardous Waste	No new effects	If contaminated soils are identified, they would be properly handled during the construction process. Operational activities would not generate any solid or hazardous wastes.
Biological Resources	The site would remain in its current, somewhat degraded, condition. Existing human activities, such as periodic mowing and operation of adjacent facilities, would continue in the area.	The proposed action would reduce available forage for birds and displace rodents. Without best management practices, construction activities would increase the chance of introducing additional invasive species. If any protected nesting birds should exist adjacent to construction activities, a certificate of registration would have to be obtained. Restoration planting (of any areas not occupied by structures, pavements, or irrigated turf) would include fire resistant plants, native grasses, and native shrubs. Because of proximity to the Hill AFB runway, design and construction would discourage increased bird activity.
Water Quality	No new effects	Under proposed regulations, a construction stormwater permit would be required if the proposed action is part of a larger planned development. During construction and operations, water quality would be protected by implementing stormwater management practices. Predevelopment hydrologic characteristics would be preserved.

Identification of the Preferred Alternative

Hill AFB prefers Alternative B (the proposed action).

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LIST OF ACRONYMS AND CHEMICAL TERMS

AFB	Air Force Base
AFOSH	Air Force Occupational Safety and Health
AICUZ	Air Installation Compatible Use Zone
ALC	Air Logistics Center
APE	Area of Potential Effect
BASH	Bird Air Strike Hazard
bgs	Below the Ground Surface
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
DAQ	Division of Air Quality (Utah)
dBA	Decibel (A-weighted)
DCE	Dichloroethene
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
ECZ	Explosive Clear Zone
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EPA	Environmental Protection Agency (United States)
FONSI	Finding of No Significant Impact
FQI	Floristic Quality Index
HAP	Hazardous Air Pollutant
MBTA	Migratory Bird Treaty Act
MILCON	Military Construction
MS4	Municipal Separate Storm Sewer Systems
NAAQS	National Ambient Air Quality Standards
NDSD	North Davis Sewer District
NEPA	National Environmental Policy Act

NHPA	National Historic Preservation Act
NO_x	Oxides of Nitrogen
NRHP	National Register of Historic Places
O_3	Ozone
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PM-10	Particulates Smaller Than 10 Microns in Diameter
PM-2.5	Particulates Smaller Than 2.5 Microns in Diameter
RCRA	Resource Conservation and Recovery Act
RHI	Range Health Index
ROD	Record of Decision
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SOC	Species of Concern (State of Utah)
SO_x	Oxides of Sulfur
UAC	Utah Administrative Code
UBC	Uniform Building Code
UPDES	Utah Pollutant Discharge Elimination System
USAF	United States Air Force
USC	United States Code
VOC	Volatile Organic Compound
WCI	Wildlife Community Index
WFRC	Wasatch Front Regional Council

1 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

Hill Air Force Base (AFB) is located approximately 25 miles north of downtown Salt Lake City and seven miles south of downtown Ogden, Utah (Figure 1). Hill AFB is surrounded by several communities: Roy and Riverdale to the north; South Weber to the northeast; Layton to the south; and Clearfield, Sunset, and Clinton to the west. The base lies primarily in northern Davis County with a small portion located in southern Weber County.

Hill AFB is an Air Logistics Center (ALC) that maintains aircraft, missiles, and munitions for the United States Air Force (USAF). In support of that mission, Hill AFB: provides worldwide engineering and logistics management for the F-22 Raptor, F-35 Joint Strike Fighter, F-16 Fighting Falcon, and A-10 Thunderbolt; accomplishes depot repair, modification, and maintenance of the F-16, A-10 Thunderbolt, and C-130 Hercules aircraft; and overhauls and repairs landing gear, wheels and brakes for military aircraft, rocket motors, air munitions, guided bombs, photonics equipment, training devices, avionics, instruments, hydraulics, software, and other aerospace-related components.

Hill AFB is the Air Force's center of industrial and technical excellence for repair and modification of composite aircraft, which include the F-22 aircraft. These activities currently occur on the east side of the Hill AFB runway.

1.2 Purpose of the Action

The purpose of the proposed action is to provide an improved staging building in which seats and canopies from F-22 aircraft can be safely and efficiently stored while the aircraft are being repaired.

1.3 Need for the Action

The proposed action is needed to accommodate current and future F-22 workloads assigned to Hill AFB aircraft maintenance squadrons. There is no existing building in the vicinity of the F-22 maintenance activities that can provide the required storage space. Seats and canopies are currently staged in Hill AFB Buildings 223 and 236, across the runway. Bringing maintenance and storage facilities all into the same vicinity would improve base safety, increase efficiency, and reduce work flow time by consolidating F-22 operations in a single location, closer to existing F-22 maintenance facilities.

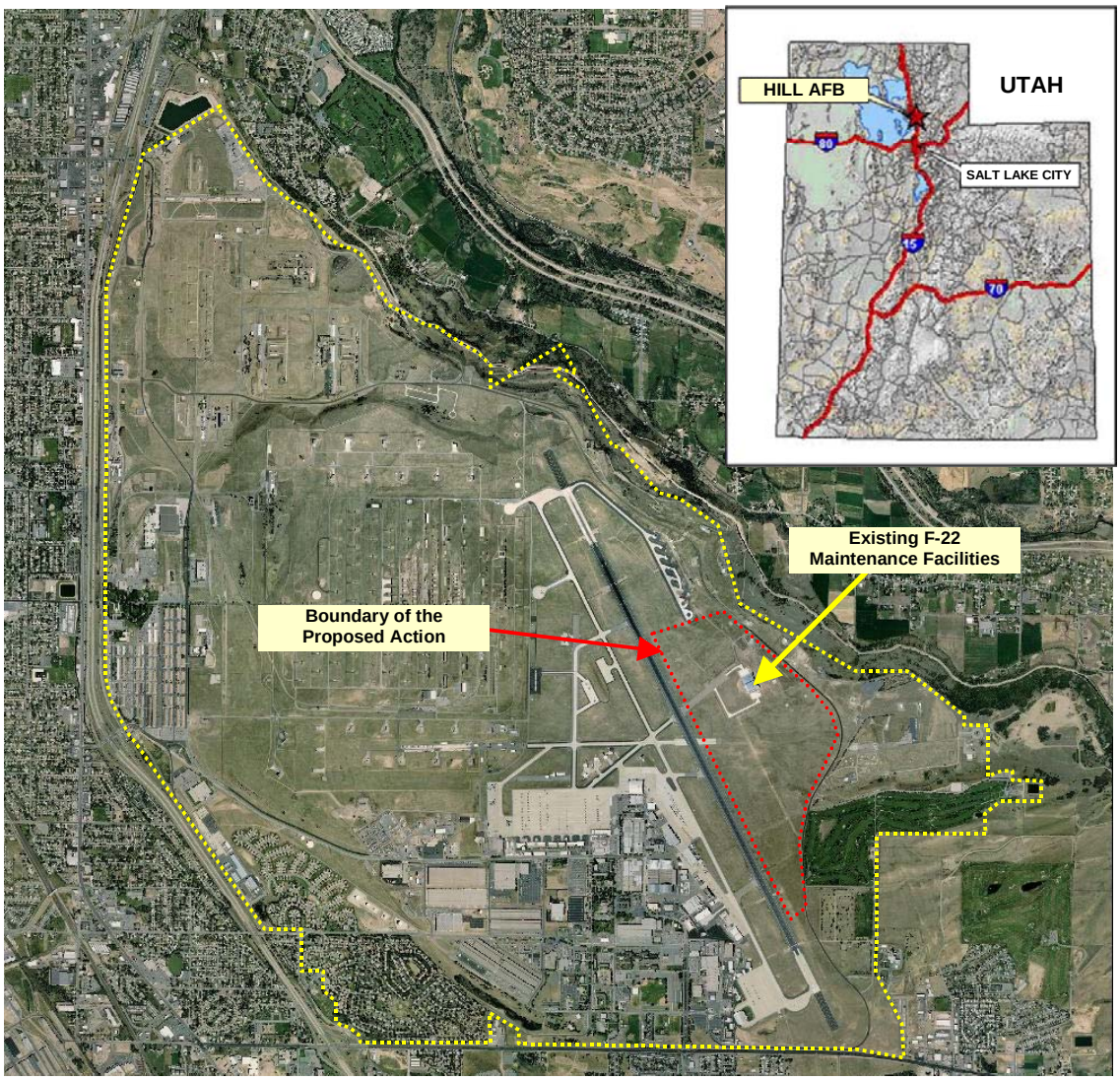


Figure 1: Location of the Proposed Action on Hill AFB

1.4 Alternative Selection Criteria

Due to the considerations presented in the preceding sections, the following selection criteria were established. The building that provides F-22 seat and canopy staging capabilities on Hill AFB should:

- provide a minimum of 2,500 square feet of storage space to accommodate seats and canopies for current and future F-22 workloads;
- have 210 feet of available clearance from other structures due to explosive clear zone (ECZ) standards (related to ejection seat and canopy explosive charges);
- do not conflict with establishing a possible future runway (east of the existing runway);
- do not degrade the function of existing radar systems;
- be located in close proximity to existing F-22 maintenance facilities
  - for public safety, eliminate risk to occupants of privately-owned vehicles from colliding with military vehicles transporting explosives
  - for efficiency, be in close proximity to F-22 maintenance facilities and existing utilities; and
- be protective of facilities, human health, and the environment.

1.5 Relevant Plans, EISs, EAs, Laws, Regulations, and Other Documents

During the scoping process, no relevant plans, environmental impact statements (EISs), or environmental assessments (EAs) were identified.

The following federal, state, and local laws and regulations would apply to the proposed action:

- The National Environmental Policy Act (NEPA), Title 42 of the United States Code (USC) Section 4321 *et seq*.
- Council on Environmental Quality regulations, Title 40 of the Code of Federal Regulations (CFR) Parts 1500-1508.
- USAF-specific requirements contained in 32 CFR Part 989, Environmental Impact Analysis Process (EIAP).
- Safety guidelines of the Occupational Safety and Health Administration (OSHA).
- Relevant Air Force Occupational Safety and Health (AFOSH) standards.
- Utah's fugitive emissions and fugitive dust rules (Utah Administrative Code [UAC] Section R307-309).
- Utah's State Implementation Plan (UAC Section R307-110), which complies with the General Conformity Rule of the Clean Air Act (CAA), Section 176 (c).
- Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 CFR Part 93.154.
- US Air Force *Conformity Guide*, 1995.
- Utah Asbestos Rules, UAC, Section R307-801.
- The Resource Conservation and Recovery Act (RCRA), 42 USC Chapter 82, and regulations promulgated thereunder, 40 CFR Part 260 *et seq*.
- Federal facility agreement dated April 10, 1991 under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 USC Section 9601 *et seq*.

- Utah hazardous waste management regulations contained in UAC Section R315, and the Hill AFB *Hazardous Waste Management Plan* dated May, 2001, and subsequent versions.
- The Clean Water Act (CWA), 33 USC Section 1251 *et seq*., and Utah statutes and regulations promulgated thereunder.
- The Energy Independence and Security Act (EISA) of 2007, Sec. 438, Storm Water Runoff Requirements for Federal Development Projects, *et seq*.
- The Hill AFB *Stormwater Management Plan - Municipal Stormwater Permit*, dated April, 2007, and subsequent versions.
- Migratory Bird Treaty Act (MBTA), 16 USC Sections 703-712 *et seq*.
- The Hill AFB *Integrated Natural Resources Management Plan*, dated August, 2007, and subsequent versions.
- The Hill AFB *Integrated Cultural Resources Management Plan*, dated January, 2007, and subsequent versions.
- The National Historic Preservation Act (NHPA), of 1966, as amended 16 USC Section 470 et seq.

During the scoping process, no other documents were identified as being relevant to the proposed action.

1.6 Decisions That Must Be Made

Hill AFB must decide whether to:

- not provide a seat and canopy staging building (no action), or
- construct a seat and canopy staging building.
- If the decision is to provide a seat and canopy staging building, then a decision must be made as to where the facility will be located.

Using or remodeling an existing Hill AFB facility was considered and eliminated by the Hill AFB planners and engineers. All existing buildings on the east side of the runway are fully committed to US Air Force workloads assigned to Hill AFB aircraft maintenance squadrons. The selection criteria for public safety and proximity to F-22 maintenance facilities preclude using an existing facility on the west side of the runway.

If Hill AFB decides to construct a seat and canopy staging building, the proponent and environmental managers would comply with the best management practices indicated in this EA. Further, within 90 days of a written decision pursuant to this EA, the proponent and environmental managers would then decide what additional plans and measures, if any, should be implemented.

If Hill AFB decides to construct a seat and canopy staging building, the base would then decide if the selected alternative would or would not be a major federal action significantly affecting the quality of the human environment. If judged as not significantly affecting the quality of the human environment, then a finding of no significant impact (FONSI) would be prepared and signed, and the project would proceed. If judged as significantly affecting the quality of the

human environment, then an EIS and a record of decision (ROD) would have to be prepared and signed before the project could proceed.

1.7 Scope of this Environmental Analysis

The scope of the current environmental analysis is to explore environmental issues related to the proposed action (construct a seat and canopy staging building) and the reasonable alternatives identified within this document.

1.7.1 History of the Planning and Scoping Process

Scoping discussions were held: to identify potential environmental concerns; to facilitate an efficient environmental analysis process; to identify issues and alternatives that would be considered in detail while devoting less attention and time to less important issues; and to save time in the overall process by helping to ensure that draft documents would adequately address relevant issues, thereby reducing the time required to proceed to a final document.

On May 27, 2009, an initial scoping meeting was conducted in Building 5, Hill AFB. Attendees included proponents of the proposed action, managers of Hill AFB's NEPA program, other environmental program managers, and the authors of this document.

During this meeting and subsequent scoping interaction, the following environmental issues were addressed:

- air quality,
- solid and hazardous wastes (including liquid waste streams),
- biological resources,
- geology and surface soils,
- water quality,
- cultural resources,
- occupational safety and health,
- air installation compatible use zone (AICUZ), and
- socioeconomic resources.

1.7.2 Issues Studied in Detail

The issues that have been identified for detailed consideration and are therefore presented in Sections 3 and 4 are:

Air Quality (attainment status, emissions, Utah's state implementation plan [SIP])

Air emissions would be produced by construction equipment. Operating the proposed action would not create air emissions. Air quality effects are discussed in Section 4 of this document.

Solid and Hazardous Wastes (materials to be used, stored, recycled, or disposed, including liquid waste streams; existing asbestos, lead-based paint, mercury, and polychlorinated biphenyls [PCBs])

During construction, solid wastes would be generated, and other hazardous wastes might be generated that would require proper treatment and/or disposal. Additional hazardous wastes could be generated if a spill of fuel, lubricants, or construction-related chemicals were to occur.

Operating the proposed action would not be expected to create solid and hazardous wastes (to include solid and liquid wastes). Effects related to solid and hazardous wastes are discussed in Section 4 of this document.

Biological Resources (flora and fauna including threatened, endangered, sensitive species; wetlands; floodplains)

Less than one acre of undeveloped land would be disturbed by the proposed action. Constructing and operating the proposed action could create roosting or nesting areas for birds (which are a nuisance, as well as being a hazard to aircraft). Effects related to biological resources are discussed in Section 4 of this document.

Water Quality (surface water, groundwater, water quantity, wellhead protection zones)

Based on the building size and a Hill AFB siting diagram for the proposed action, the land area to be disturbed would be less than one acre in size. Under current regulations, the proposed action would not be subject to construction stormwater permit requirements, but it would comply with Hill AFB stormwater management guidelines, both during the construction period and during operations. The state of Utah has proposed more stringent regulations, under which a construction stormwater permit would be required if the proposed action is considered to be part of a larger planned development.

Contamination of groundwater is known to exist approximately 15 feet below the ground surface (bgs) in the vicinity of the proposed action.

The scoping discussions did not identify any issues related to quantity of water.

A wellhead protection zone exists in the vicinity of the proposed action.

Effects related to water quality are discussed in Section 4 of this document.

Liquid waste streams created during construction are included in the discussions related to solid and hazardous wastes (Section 4 of this document). Operating the proposed action would not be expected to create liquid wastes.

1.7.3 Issues Eliminated From Further Study

The issues that were not carried forward for detailed consideration in Sections 3 and 4 are:

Geology and Surface Soils (seismicity, topography, minerals, geothermal resources, land disturbance, known pre-existing contamination)

The scoping discussions did not identify any issues related to seismicity, topography, minerals, or geothermal resources.

Excavations would be necessary to install: footings; foundations; and buried utilities consisting of water, natural gas, electricity, and storm drains. Discussions related to preventing soil erosion (stormwater pollution prevention) are addressed under water quality effects (Section 4 of this document).

Contamination of shallow soil is not known to exist in the vicinity of the proposed action. Potential discovery of suspicious soils during excavation is addressed under solid and hazardous wastes (Section 4 of this document).

Cultural Resources (archaeological, architectural, traditional cultural properties)

No significant cultural resources have been identified in the area of potential effect (APE) for the proposed action. Three previous inventories for archaeological resources were conducted on Hill AFB in 1991, 1995, and 2001, compromising 840 acres total. This has resulted in the survey of 12.5 percent of the total area of Hill AFB. Results from these projects included the recordation of one historic refuse dump and two prehistoric isolates, all determined ineligible for listing in the National Register of Historic Places (NRHP). None of the previous inventories included the APE of the proposed action. Given the lack of previous findings and the extensive development and disturbance of Hill AFB, the potential for historic properties is extremely low. However, if any are found during construction, ground-disturbing activities in the immediate vicinity will cease, the Hill AFB Cultural Resources Program will be notified, and unanticipated discovery of archaeological deposits procedures will be implemented with direction from the Hill AFB Cultural Resources Program in accordance with Standard Operating Procedure 5 in the Hill AFB *Integrated Cultural Resources Management Plan* (Hill 2007a). The Utah State Historic Preservation Office (SHPO) concurred with a finding of no adverse effect after reviewing the proposed action (Appendix A). Hill AFB has determined formal consultation with American Indian Tribes is not warranted given the absence of resources that may be reasonably construed as being of interest to them.

Occupational Safety and Health (physical and chemical hazards, radiation, explosives, bird and wildlife hazards to aircraft)

Throughout the construction phase of the project, Hill AFB contractors would follow OSHA safety guidelines as presented in the CFR. Hazardous materials that could be used during construction are included in the discussions related to solid and hazardous wastes (Section 4 of this document).

Related to Hill AFB military personnel and civilian employees, the Bio-environmental Engineering Flight (75 AMDS/SGPB) is responsible for implementing AFOSH standards. The AFOSH program addresses (partial list): hazard abatement, hazard communication, training, personal protective equipment and other controls to ensure that occupational exposures to hazardous agents do not adversely affect health and safety, and acquisition of new systems.

The scoping discussions did not identify any issues related to occupational safety and health that would not be routinely addressed by OSHA rules and/or the Bio-engineering Flight.

AICUZ (noise, accident potential, airfield encroachment)

The proposed facilities described in this document lie in the 85 A-weighted decibel (dBA) noise level zone (documented in the current version of the Hill AFB AICUZ report). The primary source is external jet noise from the Hill AFB runway. At this noise level, appropriate noise reduction must be assured, based on the specific activities to be conducted in each work area. The external jet noise would be addressed by incorporating noise level reduction measures into construction design, in compliance with the Uniform Building Code (UBC) Chapter 35, and the current version of the Hill AFB AICUZ report. Since noise abatement measures would be provided by design engineers through structural controls, noise effects will not be addressed in a detailed fashion in this document.

Other than discouraging new bird populations near the Hill AFB runway (discussed under biological effects in Section 4 of this document), the scoping discussions did not identify any issues related to aircraft accident potential or airfield encroachment.

Socioeconomic Resources (local fiscal effects including employment, population projections, and schools)

Opportunities would exist for local construction workers if the proposed action is constructed. The proposed action is not expected to create additional permanent jobs at Hill AFB. The scoping discussions did not identify any issues related to population projections or schools.

1.8 Applicable Permits, Licenses, and Other Coordination Requirements

Obtaining, modifying, and/or complying with the following permits would be required to implement the proposed action.

- The Hill AFB Title V Operating Permit (Permit Number: 1100007001, and subsequent versions). See Section 4.2.1 for additional details.
- Industrial pretreatment permit number 110 issued by the North Davis Sewer District (NDSD), dated November 1, 2007, and subsequent versions. See Section 4.2.4 for additional details.
- General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity permit number UTR000444, which expired December 2007 (but will be valid until a new permit is issued, the application for which has been submitted), and subsequent versions. See Section 4.2.4 for additional details.
- Requirements specified in Utah's Storm Water General Permit for Construction Activities. See Section 4.2.4 for additional details.
- The Hill AFB *Stormwater Management Plan - Municipal Stormwater Permit*, dated April, 2007, and subsequent versions. See Section 4.2.4 for additional details.
- Utah Pollutant Discharge Elimination System (UPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), permit number UTR090028, which expired December 2007 (but will be valid until a new permit is issued, the application for which has been submitted), and subsequent versions. See Section 4.2.4 for additional details.

The proponents would coordinate with the Hill AFB hazardous materials program manager (75 CEG/CEVC) to discuss hazardous materials brought on base to construct the proposed action. See Section 4.2.2 for additional details.

2.0 ALTERNATIVES, INCLUDING THE PROPOSED ACTION

2.1 Introduction

This section discusses the process used to develop the alternatives, describes the alternatives, and compares (in a brief summary fashion) the alternatives and their expected effects. Finally, this section states the Air Force's preferred alternative.

2.2 Process Used to Develop the Alternatives

As discussed in Sections 1.3 and 1.4 of this document, Hill AFB intends to provide a seat and canopy staging building. The proposed building described in this document would comply with all relevant design standards and would have sufficient space to accommodate current and projected F-22 workloads.

Hill AFB force aircraft maintenance managers investigated using existing facilities (see Section 2.3.3.1), and other potential locations for siting the proposed seat and canopy staging building (see Section 2.3.3.2).

2.3 Description of Alternatives

2.3.1 Alternative A: No Action

Under the no action alternative, the seat and canopy staging building would not be constructed. Seats and canopies for F-22 aircraft would be staged in Buildings 223 and 236, across the runway. Undesirable safety, efficiency, and work flow time issues would exist.

2.3.2 Alternative B: Proposed Action - Construct a Seat and Canopy Staging Building

The proposed action is to construct a seat and canopy staging building east of the Hill AFB runway (Figure 1).

The proposed action would consist of:

- Constructing a single story, steel frame warehouse style structure in the size range of 2,500 to 3,200 square feet. The concrete slab on grade building would have metal sides with partial masonry block veneer, a pitched standing seam metal roof, a grounding and lightning protection system, overhead lights, a fire suppression system (water only), and forced air heat sufficient to protect the fire suppression system during winter months.
- Connecting to existing buried utilities consisting of water, natural gas, electricity, and storm drains.
- Providing paved access for delivery and emergency vehicles.
- Disturbing less than one acre of land area.

2.3.3 Alternatives Eliminated From Detailed Study

2.3.3.1 Use or Remodel an Existing Facility

Using or remodeling an existing Hill AFB facility was considered and eliminated by the Hill AFB planners and engineers. Marc David, the Hill AFB facility program manager, stated that all industrial buildings on Hill AFB are fully allocated. No excess space exists in which the seat and canopy staging activities could occur.

2.3.3.2 Other Locations

Hill AFB planners and engineers considered other potential locations for the seat and canopy staging building. Potential locations west of the Hill AFB runway would not meet the selection criteria for public safety or proximity to F-22 maintenance facilities. Dave Gange, lead facility engineer for the Hill AFB aircraft maintenance group, stated that existing and upcoming F-22 maintenance facilities are closely grouped on the east side of the Hill AFB runway. Five docks have been constructed; seven more have been approved, sited, designed, and will be completed within the next two years. In aggregate, these docks will represent approximately 70,000 square feet of contiguous space, with additional heavy maintenance areas being required as the F-22 fleet ages. There is no location in or near the industrial areas west of the runway where these facilities could be located. A capital investment of approximately 80 million dollars was required to provide the twelve F-22 docks. These are new facilities, with many years of service ahead of them. Moving the F-22 maintenance facilities west of the runway was not considered a reasonable alternative for both spatial and budgetary reasons.

Figure 1 presents the proposed boundary within which the building could be constructed on the east side of the runway. The 210 foot ECZ requirement was calculated by Paul Kracht, Hill AFB weapons safety manager, as stipulated in *Air Force Manual 91-201 Explosives Safety Standards*, using Table 12.9 for high density 1.2.1 explosives. This area of Hill AFB exhibits fairly uniform characteristics. Any specific building site within the proposed boundary would meet the selection criteria presented in Section 1.4, and would result in nearly equivalent environmental effects. Figure 2 shows the exact location of the proposed building due to meeting all of the selection criteria.

Figure 2: Specific Location of the Proposed Action

2.4 Summary Comparison of Alternatives and Predicted Achievement of Project Objectives

2.4.1 Summary Comparison of Alternatives

The no action alternative would be to continue current operations using Buildings 223 and 236, across the runway. Safety concerns would continue to exist, and F-22 operations would remain inefficient with no reduction in work flow time.

Under Alternative B (proposed action) a seat and canopy staging building would be constructed, enabling Hill AFB to safely and efficiently accommodate current and projected new weapon workloads.

2.4.2 Summary Comparison of Predicted Achievement of Project Objectives

Description of the Project Objective	Alternative A (No Action)	Alternative B (Proposed Action)
Provide a minimum of 2,500 square feet of storage space to accommodate seats and canopies for current and future F-22 workloads	Yes	Yes
Have 210 feet of available clearance from other structures due to ECZ standards (related to ejection seat and canopy explosive charges)	Yes	Yes
Do not conflict with establishing a possible future runway (east of the existing runway)	Yes	Yes
Do not degrade the function of existing radar systems	Yes	Yes
For public safety, eliminate risk to occupants of privately-owned vehicles from colliding with military vehicles transporting explosives	No	Yes
For efficiency, be in close proximity to F-22 maintenance facilities and existing utilities	No	Yes
Be protective of facilities, human health, and the environment	No	Yes

Table 1: Summary Comparison of Predicted Achievement of Project Objectives

2.5 Identification of the Preferred Alternative

Hill AFB prefers Alternative B (the proposed action).

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

Section 3 of this document discusses the existing conditions of the potentially affected environment, establishing a resource baseline against which the effects of the various alternatives can be evaluated. It presents relevant facilities and operations, environmental issues, pre-existing environmental factors, and existing cumulative effects due to human activities in the vicinity of the proposed action or the alternative locations.

Issues discussed during scoping meetings, but eliminated from detailed consideration (see Section 1.7.3) include:

- geology and surface soils (seismicity, topography, minerals, geothermal resources, land disturbance, known pre-existing contamination);
- cultural resources (archaeological, architectural, traditional cultural properties);
- occupational safety and health (physical and chemical hazards, radiation, explosives, bird and wildlife hazards to aircraft);
- AICUZ (noise, accident potential, airfield encroachment); and
- socioeconomic resources (local fiscal effects including employment, population projections, and schools).

3.2 Description of Relevant Facilities and Operations

The existing facilities do not satisfy the desired safety or efficiency criteria. No other relevant facilities or operations were identified.

3.3 Description of Relevant Affected Issues

3.3.1 Air Quality

Hill AFB is located in Davis and Weber Counties, Utah. Neither county is in complete attainment status with federal clean air standards (Figures 3 and 4). Non-attainment areas fail to meet national ambient air quality standards (NAAQS) for one or more of the criteria pollutants: oxides of nitrogen (NOx), sulfur dioxide (SO_2), ozone (O_3), particulates less than 10 microns in diameter (PM-10), particulates less than 2.5 microns in diameter (PM-2.5), carbon monoxide (CO), and lead. Davis County (the county in which the proposed action lies) is designated as a non-attainment area for PM-2.5 and is awaiting a non-attainment designation for ozone. Due to the ozone designation, emission offsets are required for new sources emitting NOx and volatile organic compounds (VOCs), which are precursors to ozone formation. Due to the PM-2.5 designation, Utah's Division of Air Quality (DAQ) must submit an implementation plan to the United States Environmental Protection Agency (EPA) for reducing concentrations of the five main types of pollutants contributing to fine particle concentrations in the non-attainment areas (the pollutants are direct PM-2.5 emissions, SO_2, NOx, ammonia, and VOCs).

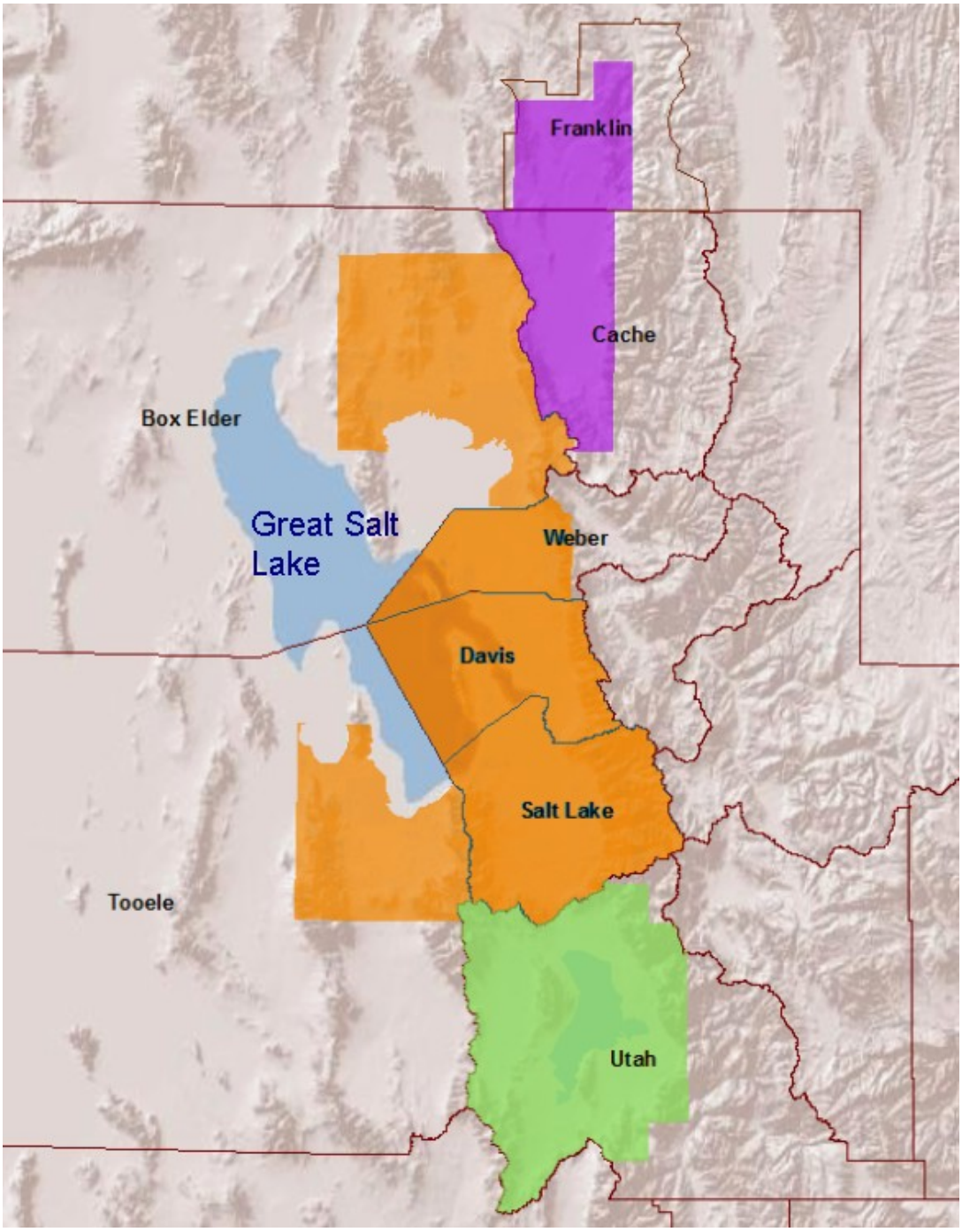


Figure 3: State of Utah Areas of Non-Attainment for PM-2.5

Figure 4: State of Utah Recommended Areas of Non-Attainment for Ozone

The current air quality trend at Hill AFB is one of controlling emissions as Hill AFB managers implement programs to eliminate ozone-depleting substances, limit use of VOCs, switch to lower vapor pressure solvents and aircraft fuel, convert internal combustion engines from gasoline and diesel to natural gas, and improve the capture of particulates during painting and abrasive blasting operations (in compliance with the base's Title V air quality permit).

Emission estimates are available for criteria air pollutants and hazardous air pollutants (HAPs) for Hill AFB (Hill 2009), and criteria air pollutants for Davis and Weber Counties (DAQ 2009b). The estimates, shown below in Table 2 were based on data from calendar year 2008 for Hill AFB, and for calendar year 2005 for Davis and Weber Counties.

Location	VOC	CO	NOx	PM-10	HAP	SOx
Hill AFB	215	80	133	20	50	1
Davis County	16,958	63,439	10,720	3,641	not reported	3,480
Weber County	14,796	47,956	6,868	2,882	not reported	238

Table 2: Baseline Criteria Pollutants and HAPs (tons/year)

3.3.2 Solid and Hazardous Wastes

In general, hazardous wastes include substances that, because of their concentration, physical, chemical, or other characteristics, may present substantial danger to public health or welfare or to the environment when released into the environment or otherwise improperly managed. Potentially hazardous and hazardous wastes generated at Hill AFB are managed as specified in the *Hill AFB Hazardous Waste Management Plan* with oversight by personnel from the Environmental Management Division and the Defense Reutilization and Marketing Office (DRMO). Hazardous wastes at Hill AFB are properly stored during characterization, and then manifested and transported off site for treatment and/or disposal.

No wastes are created by the existing seat and canopy storage operations.

3.3.3 Biological Resources

No federal or state endangered or threatened species are known to occur on Hill AFB (Hill 2007b) and no likely habitat for any such species would be disturbed by the proposed action. Wildlife species that are federally listed, candidates for federal listing, or for which a conservation agreement is in place automatically qualify for the Utah sensitive species list. The additional species on the Utah sensitive species list, "wildlife species of concern," are those species for which there is credible scientific evidence to substantiate a threat to continued population viability. Two species on Utah's species of concern (SOC) list have been sighted on Hill AFB, the Long Billed Curlew and the Bobolink. Those sighting were unusual for these species and occurred during the fall migration. These species have not been observed in the vicinity of the proposed action. There are no wetlands or floodplains in the vicinity of the

alternatives discussed in this document. The alternatives discussed in this document are located in or near developed areas on Hill AFB.

The habitat within this area (less than one acre) is classified as semi-improved (Hill AFB habitat descriptions [Hill 2007b]). This habitat is characterized by grass/forb habitat that is mowed on a consistent basis. Periodic maintenance is performed primarily for reasons such as erosion and dust control, bird control, and visual clear zones. This land use classification can include areas adjacent to runways, taxiways, and aprons; runway clear zones; lateral safety zones; rifle and pistol ranges; weapons firing and bombing ranges; picnic areas; ammunition storage areas; antenna facilities; and golf course roughs.

Semi-improved areas are not irrigated, and the plant species that grow in these communities survive on natural precipitation. Typically, there is little to no over story and only a small number of wild trees exist. Mowing prevents new trees from establishing. The soil is coarse grained, with most moisture evaporating or percolating beneath the root zone. Plants growing in this habitat have adapted to sparse soil moisture and can withstand periods of drought as well as cold snowy conditions. The grassy areas provide food and cover for a limited number of wildlife species. Insects living in this habitat provide food for a small diversity of birds.

The natural resources program at Hill AFB has created models to measure components that indicate the health of the habitat at specific locations. The components that are measured include: the health of a range (range health index, or RHI), the ability of a habitat to support wildlife (wildlife community index, or WCI), and the encroachment of invasive species (floristic quality index, or FQI). Site surveys quantify the health of a range by producing calculated indices ranging from 0.01 to 1.00 with 1.00 being the optimal level at which a habitat can function. For the RHI scale, 0.80 and higher is considered pristine, and below 0.30 is considered highly degraded. The RHI for this site is 0.60, the WCI is 0.24, and the FQI is 0.46.

There are several Northern Pocket Gopher burrows within the project area. Various species of birds would be expected to feed in the general vicinity of the proposed action (see Table 3).

Species Common Name	Feed and/or Hunt
American kestrel	✓
American robin	✓
Barn swallow	✓
Black-billed magpie	✓
Brewer's blackbird	✓
Brown headed cowbird	✓
California gull	✓
Common raven	✓
European starling	✓

Franklin's gull	✓
Horned lark	✓
House finch	✓
House sparrow	✓
Killdeer	✓
Mourning dove	✓
Prairie falcon	✓
Red-tailed hawk	✓
Rock dove	✓
Swainsons hawk	✓
Western kingbird	✓
Western meadowlark	✓

Table 3: Birds That Could Occupy the Project Area

3.3.4 Water Quality

In areas of Hill AFB that are not heavily developed, runoff is allowed to infiltrate into the ground through overland flow or surface ditches, discharging to large unoccupied areas. In developed areas, stormwater is typically conveyed to 14 retention or detention ponds within Hill AFB boundaries. Stormwater from retention ponds percolates and evaporates, resulting in zero discharge. Detention ponds are checked for presence of an oil sheen prior to discharging stormwater by manually opening the outfall valves.

No surface water bodies are present within the area proposed for constructing the seat and canopy storage building. Most of the precipitation falling on this unoccupied area would be expected to infiltrate into the ground. Based on a review of the Hill AFB *Hill AFB Stormwater Management Plan - Municipal Stormwater Permit* (Stantec 2007) and site topography, no storm drains exist in this area of Hill AFB. Precipitation either evaporates or infiltrates into on-site soils.

Groundwater in the vicinity of the proposed action is found approximately 15 feet bgs, and is contaminated with dichloroethene (DCE), as shown in Figure 5.

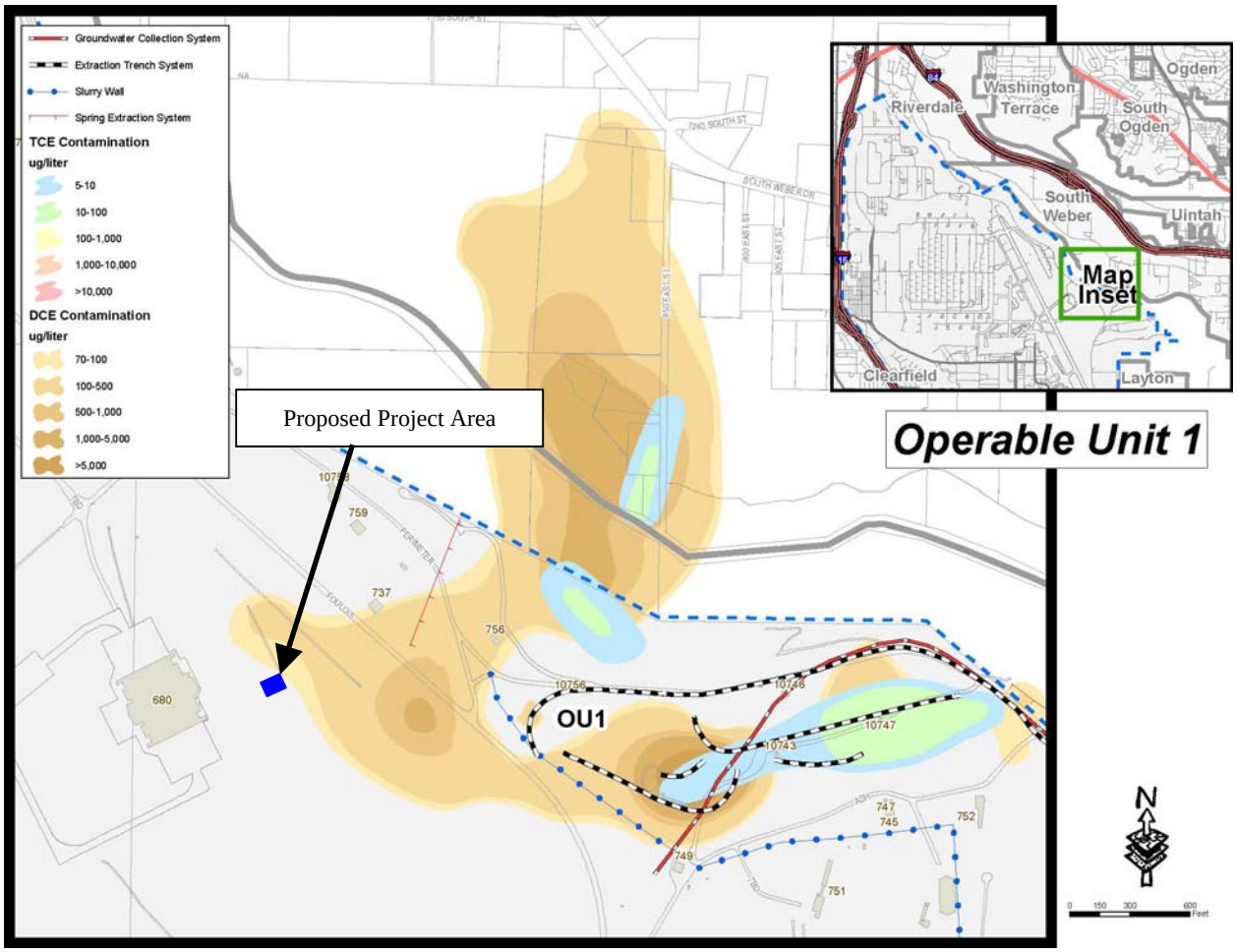


Figure 5: Groundwater Contamination in the Vicinity of the Proposed Action

A wellhead protection zone exists in the vicinity of the proposed action.

3.4 Description of Relevant Pre-Existing Environmental Factors

The Wasatch Front Regional Council (WFRC 2003) assessed earthquake hazards for Davis County, Utah, including the portion of Hill AFB that includes the alternatives discussed in this document. The Davis County liquefaction potential map shows this area of Hill AFB to be in the zone labeled as very low risk. The Davis County earthquake hazard map shows this area of Hill AFB to be outside of known fault zones. The Davis County landslide hazard map shows this area of Hill AFB to be outside of known landslide risk zones.

During scoping discussions and subsequent analysis, no other pre-existing environmental factors (e.g., hurricanes, tornados, floods, droughts) were identified for the proposed action.

3.5 Description of Areas Related to Cumulative Effects

For air quality, the area related to cumulative effects would include Hill AFB, Davis County, and Weber County.

For solid and hazardous wastes, the area related to cumulative effects would include Hill AFB.

For biological resources, the area related to cumulative effects would include Hill AFB.

For water quality, the area related to cumulative effects would include Hill AFB and waters downstream from the Hill AFB stormwater retention ponds.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This section discusses effects to the resources that were identified for detailed analysis in Section 1.7.2, and for which existing conditions were presented in Section 3.3. For each of these resources, the following analyses are presented:

- direct, indirect, and cumulative effects of the no action alternative; and
- direct, indirect, and cumulative effects of the proposed action (Alternative B).

4.2 Predicted Effects to Relevant Affected Resources of All Alternatives

4.2.1 Predicted Effects to Air Quality

4.2.1.1 Alternative A: No Action

The no action alternative would have no new direct effects, no new indirect effects, and no new cumulative effects. However, negative effects on air quality would continue, due to emissions from the trucks hauling the seats and canopies back and forth across the runway.

4.2.1.2 Alternative B (Proposed Action): Construct a Seat and Canopy Staging Building

Direct Effects Due to Construction

Fugitive Dust: Fugitive emissions from construction activities would be controlled according to UAC Section R307-205, *Emission Standards: Fugitive Emissions and Fugitive Dust* and the Hill AFB *Fugitive Dust Plan*. Good housekeeping practices would be used to maintain construction opacity at less than 20 percent. Haul roads would be kept wet. Any soil that is deposited on nearby paved roads by construction vehicles would be removed from the roads and either returned to the site or placed in an appropriate on-base disposal facility.

Heavy Equipment: The internal combustion engines of heavy equipment would generate emissions of VOCs, CO, NOx, PM-10, PM-2.5, HAPs and oxides of sulfur (SOx). Assumptions and estimated emissions for the construction period are listed in Table 4.

Data Assumptions

Equipment Type	Diesel Emission Factor (lbs/hr)					
	VOC (HC)	CO	NOx	PM10	HAPs	SOx
Asphalt Paver	0.28	1.24	2.96	0.24	0.05	0.25
Bobcat Loader	0.14	0.67	1.00	0.10	0.01	0.08
Cable Plow	0.59	3.75	4.49	0.59	0.08	0.38
Compressor (boring)	0.25	1.62	1.94	0.25	0.04	0.16
Concrete Truck	0.80	3.55	8.50	0.69	0.15	0.72
Crane	2.14	6.96	17.08	2.39	0.33	1.54
Dump Truck	0.63	2.04	6.98	0.58	0.16	0.65
Flat Bed Truck	0.48	1.54	5.29	0.44	0.12	0.49
Fork Lift	0.42	2.47	1.98	0.40	0.05	0.23
Generator	0.02	0.10	0.12	0.02	0.00	0.01
Loader/Backhoe	0.87	4.12	6.12	0.64	0.06	0.52
Motored Grader	0.83	2.01	5.08	0.53	0.06	0.46
Scraper	0.33	2.31	4.03	0.58	0.13	0.42
Track Hoe	0.91	6.65	13.75	1.84	0.26	1.19
Vibratory Compactor	0.38	1.44	4.31	0.36	0.09	0.46
Water Truck	1.10	3.58	12.28	1.02	0.28	1.14
Wheeled Dozer	0.46	1.48	5.08	0.35	0.08	0.49

Note: VOCs = Hydrocarbons and HAPs = Aldehydes
Source: Industry Horsepower Ratings and EPA 460/3-91-02

Construct Seat and Canopy Staging Building

EQUIPMENT TYPE	HOURS OF OPERATION	Diesel Emissions (lbs)					
		VOC	CO	NOx	PM10	HAPs	SOx
Asphalt Paver	8	2.2	9.9	23.7	1.9	0.4	2.0
Bobcat Loader	0	0.0	0.0	0.0	0.0	0.0	0.0
Cable Plow	0	0.0	0.0	0.0	0.0	0.0	0.0
Compressor (boring)	0	0.0	0.0	0.0	0.0	0.0	0.0
Concrete Truck	16	12.8	56.8	136.0	11.0	2.4	11.5
Crane	0	0.0	0.0	0.0	0.0	0.0	0.0
Dump Truck	40	25.2	81.6	279.2	23.2	6.4	26.0
Flat Bed Truck	0	0.0	0.0	0.0	0.0	0.0	0.0
Fork Lift	24	10.1	59.3	47.5	9.6	1.2	5.5
Generator	0	0.0	0.0	0.0	0.0	0.0	0.0
Loader/Backhoe	80	69.6	329.6	489.6	51.2	4.8	41.6
Motored Grader	8	6.6	16.1	40.6	4.2	0.5	3.7
Scraper	4	1.3	9.2	16.1	2.3	0.5	1.7
Track Hoe	0	0.0	0.0	0.0	0.0	0.0	0.0
Vibratory Compactor	8	3.0	11.5	34.5	2.9	0.7	3.7
Water Truck	16	17.6	57.3	196.5	16.3	4.5	18.2
Wheeled Dozer	0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL ESTIMATED EMISSIONS (lbs)		**148.5**	**631.3**	**1263.7**	**122.7**	**21.4**	**113.9**
TOTAL ESTIMATED EMISSIONS (tons)		**0.07**	**0.32**	**0.63**	**0.06**	**0.01**	**0.06**

Table 4: Calculated Heavy Equipment Emissions

Direct Effects Due to Operations

Based on information received during the scoping meeting held on May 27, 2009 and subsequent discussions with the proponent, the only air emissions due to operating the proposed action would be related to the natural gas fired furnace. Assumptions and estimated emissions for the operational period are listed in Table 5.

Data Assumptions

Equipment Type	Natural Gas Emission Factor (pounds/MMSCF)					
	VOC	CO	NOx	PM10	HAPs	SOx
Natural Gas Furnace	5.5	40.0	94.0	7.6	0.01	0.6

Conversion Factors

	Calculate Annual Fuel Consumption					
Square Feet	3,200	3,200	3,200	3,200	3,200	3,200
BTU per hour per square foot	20	20	20	20	20	20
Heating hours per year	5,000	5,000	5,000	5,000	5,000	5,000
Million BTU per year	320	320	320	320	320	320
MMSCF per year	0.3	0.3	0.3	0.3	0.3	0.3

Operate Seat and Canopy Staging Building

Equipment Type	Natural Gas Emissions (pounds/year)					
	VOC	CO	NOx	PM10	HAPs	SOx
Natural Gas Furnace	2	12	29	2	0.0	0
TOTAL ESTIMATED EMISSIONS (pounds/year)	2	12	29	2	0.0	0
TOTAL ESTIMATED EMISSIONS (tons/year)	0.00	0.01	0.01	0.00	0.00	0.00

Notes:
MMSCF = Million Standard Cubic Feet
BTU = British Thermal Unit

1 cubic foot natural gas = 1,028 BTU
Source: http://www.eia.doe.gov/kids/energyfacts/science/energy_calculator.html#natgascalc

Office Space (as opposed to warehouse space): 15-45 BTU per hour per square foot
There are approximately 5,000 heating hours in an average year
Source: Dale R. Scott, P.E., SAIN Engineering Associates, Inc., 75CES/CEEE, Hill AFB, UT

Warehouse space heating consumes 65% of energy compared to offices on a per square foot basis
Source: *Commercial Building Energy Consumption and Expenditures* , Energy Information Administration, 1998

Assume 30 BTU per hour per square foot for office, 20 for warehouse
Emission factors: EPA values for residential furnaces
For natural gas, SOx assumed equal to SO2

Table 5: Calculated Operational Emissions

If required, prior to operating the proposed action, Hill AFB air quality managers would submit notices of intent, seven day notifications, and modification requests to DAQ. Hill AFB would not be allowed to operate the facilities until DAQ concurs that federal and state requirements are being met. Hill AFB ensures conformity with the CAA by complying with EPA regulations, Utah's SIP, and USAF conformity guidance.

Conformity Applicability Determination

Due to local non-attainment status, a conformity applicability determination (compliant with 40 CFR 93.153 and UAC R-307-115) was completed for the proposed action. The proposed action would be required to demonstrate conformity with the CAA unless an applicability determination shows that it is exempt from conformity, in this case, due to having annual emissions below the thresholds established in 40 CFR 93.153(b)(1) and (b)(2). Predicted air emissions due to construction and due to operations were all much less than the established threshold values.

Indirect Effects

As discussed in Section 3.3.4, shallow groundwater in the vicinity of the proposed action is contaminated with DCE. Because there is a potential pathway for chemical vapors to enter the proposed building, vapor intrusion barriers would be incorporated into the building's design. Alternatively, designers could perform soil vapor sampling to confirm or deny the potential for vapor intrusion at this location.

During scoping and the detailed analysis, no other indirect effects related to air quality were identified for the proposed action.

Cumulative Effects

Construction: Construction-related air emissions would be limited to a duration of several months. Comparing the magnitude of predicted construction-related air emissions (Table 4) to existing emissions for Hill AFB, Davis and Weber Counties (Table 2), there would not be significant cumulative effects to air quality associated with constructing the proposed action.

Operations: Hill AFB air quality managers would ensure that long-term operation of the proposed action complies with the Hill AFB Title V Permit, any relevant approval orders, EPA regulations, and the Utah SIP. Any required air quality control devices would be installed and tested prior to allowing newly installed equipment to begin operating. Comparing the magnitude of predicted operational air emissions (Table 5) to existing emissions in Hill AFB, Davis and Weber Counties (Table 2), no significant cumulative effects to air quality were identified for operating the proposed action.

4.2.2 Predicted Effects to Solid and Hazardous Waste

4.2.2.1 Alternative A: No Action

With respect to solid and hazardous waste, the no action alternative would have no new direct effects, no new indirect effects, and no new cumulative effects.

4.2.2.2 Alternative B (Proposed Action): Construct a Seat and Canopy Staging Building

Direct Effects Due to Construction

Waste Generation: During the proposed construction activities, solid wastes expected to be generated would be construction debris consisting mainly of concrete, metal, and building materials. These items would be treated as uncontaminated trash and recycled when feasible. It is possible that equipment failure or a spill of fuel, lubricants, or construction-related chemicals could generate solid or hazardous wastes. In the event of a spill of regulated materials, Hill AFB environmental managers and their contractors would comply with all federal, state, and local spill reporting and cleanup requirements.

Waste Management: Hill AFB personnel have specified procedures for handling construction-related solid and hazardous wastes in their engineering construction specifications. The procedures are stated in Section 01000, General Requirements, Part 1, General, Section 1.24,

Environmental Protection. All solid non-hazardous waste is collected and disposed or recycled on a routine basis. Samples from suspect wastes are analyzed for hazardous vs. non-hazardous determination. The suspect waste is safely stored while analytical results are pending. Hazardous wastes are stored at sites operated in accordance with the requirements of 40 CFR 265. The regulations require the generator to characterize hazardous wastes with analyses or process knowledge. Hazardous wastes are eventually labeled, transported, treated, and disposed in accordance with federal and state regulations.

Excavated Soils: There is no known soil contamination at the location of the proposed action. However, excavations near areas of industrial activity on Hill AFB could potentially encounter contaminated soil. If unusual odors or soil discoloration were to be observed during any excavation or trenching necessary to complete the proposed action, the soil would be stored on plastic sheeting and the remedial manager from the Hill AFB Environmental Restoration Branch (75 CEG/CEVR) would be notified (Ms. Shannon Smith at 801-775-6913). Any excess clean soil would either be used as fill for another on-base project or placed in the on-base landfill. Any soil determined to be hazardous would be eventually labeled, transported, treated, and disposed in accordance with federal and state regulations. No soil would be taken off base without prior 75 CEG/CEVR written approval.

Direct Effects Due to Operations

Based on information received during the scoping meeting held on May 27, 2009, no issues related to solid and hazardous waste were identified due to operating the proposed action.

Indirect Effects

During scoping and the detailed analysis, no indirect effects related to solid and hazardous waste were identified for the proposed action.

Cumulative Effects

Since no wastes would be created, there would be no cumulative solid or hazardous waste effects associated with the proposed action.

4.2.3 Predicted Effects to Biological Resources

4.2.3.1 Alternative A: No Action

With respect to biological resources, the no action alternative would have no new direct effects, indirect effects, or cumulative effects. The site would remain in its current, somewhat degraded, condition. Existing human activities, such as periodic mowing and operation of adjacent facilities, would continue in the area.

4.2.3.2 Alternative B (Proposed Action): Construct a Seat and Canopy Staging Building

Direct Effects Due to Construction

Construction: Grading and covering the site with structures and pavements would reduce the forage area for avian species and displace any rodent species. It would reduce the RHI from 0.60 to 0.01. The loss of habitat would not be critical because of the small size of the proposed project (less than one acre). Soil compaction due to using heavy equipment could make it difficult to re-establish vegetation that is desired.

Invasive Species: Hill AFB habitats have been invaded by numerous invasive plant species. The potential for additional invasive plants would increase with ground disturbance and introduction of any required fill.

Bird Aircraft Strike Hazard (BASH): Because of the close proximity of this facility to the runway, over hanging structures that would provide a place for avian species to nest or perch would encourage bird species to inhabit this area and create an additional hazard to air traffic on the runway. To discourage bird activity for the applicable bird species (such as European starlings, Pigeons, and House finches) overhangs, covered ledges, and holes in structures would all be avoided during the design and construction process.

Best Management Practices: If construction should occur during nesting season (usually April through August), a bird survey would be conducted, and an appropriate certificate of registration would be obtained to permit the taking of any protected species nesting in the trees along the western boundary of the proposed project area. Loss of habitat would be managed by providing a functional lift to the habitat. This would be accomplished by restoration planting (of any areas not occupied by structures or pavements) that would include fire resistant plants, native grasses, and native shrubs as outlined in the Hill AFB *Integrated Natural Resources Management Plan* (Hill 2007b). Any areas where revegetation would be desired would be scarified to promote plant growth.

Direct Effects Due to Operations

Operating the proposed action would prevent the chance for succession to re-establish the area to a native state because the soil surface would be permanently covered and/or maintained.

Indirect Effects

Indirect effects of displaced mammals would result in increase of mammals occupying less semi-improved habitat on Hill AFB. Loss of foraging area would result in birds moving to other semi-improved habitat areas for food.

During scoping and the detailed analysis, no other indirect effects related to biological resources were identified for the proposed action.

Cumulative Effects

Past actions at this location and in the immediate vicinity include mowing vegetation, constructing buildings and pavements, and installing chain link fences surrounding the runway. These actions have changed a native sagebrush habitat into a grass/forb habitat. Loss of wildlife habitat and introduction of invasive plants has occurred. This has been quantified by calculating the values for RHI of 0.60, FQI of .24, and WCI of 0.46. Long-term existence of the proposed facility would prevent succession of this area to a native state. However, due to the small size of the proposed project and already degraded biological indices, no significant cumulative effects to biological resources were identified for the proposed action.

4.2.4 Predicted Effects to Water Quality

4.2.4.1 Alternative A: No Action

With respect to water quality, the no action alternative would have no new direct effects, no new indirect effects, and no new cumulative effects.

4.2.4.2 Alternative B (Proposed Action): Construct a Seat and Canopy Staging Building

Direct Effects Due to Construction

Based on information provided by Hill AFB engineers, the land area to be disturbed would be less than one acre in size. Under current regulations, the proposed action would not be covered under Utah's general construction permit rule for stormwater compliance. Nonetheless, prior to initiating any construction activities, the proponents would coordinate with the Hill AFB water quality manager (75CEV/CEGOC) to ensure compliance with the *Hill AFB Stormwater Management Plan - Municipal Stormwater Permit*.

The state of Utah has proposed more stringent regulations, under which a construction stormwater permit would be required if the proposed action is considered to be part of a larger planned development. In this case, the proposed action would be covered under Utah's general construction permit rule for stormwater compliance. Prior to initiating any construction activities, this permit must be obtained and erosion and sediment controls must be installed according to a stormwater pollution prevention plan (SWPPP). The SWPPP would specify measures to prevent soil from leaving the construction site on the wheels of construction vehicles, thereby controlling the addition of sediments to the storm drain system. The proponents would coordinate with the Hill AFB water quality manager (75CEV/CEGOC) prior to submitting an application for a Utah construction stormwater permit.

Hill AFB construction specifications would require the contractor to restore the land to a non-erosive condition. All areas disturbed by excavation would be backfilled, and then either be covered by pavements, gravel, or re-planted, re-seeded, or sodded to prevent soil erosion.

Since the proposed action would convert a small area occupied by open land to impermeable surfaces, some increased stormwater runoff volume would be expected unless runoff controls were to be created during construction of the facility. EISA Section 438 specifies storm water

runoff requirements for federal development projects. The sponsor of any development or redevelopment project involving a federal facility with a footprint that exceeds 5,000 square feet (for the proposed action, this value could be reached when including the building and associated pavements) must use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Compliance with this requirement (by designing and constructing detention and/or retention structures) would eliminate downstream effects due to creating impermeable surfaces.

As mentioned in Section 3.3.4, groundwater in the vicinity of the proposed action is found approximately 15 feet bgs, and is contaminated with DCE. The proposed action would not require excavations deeper than 10 feet bgs; contact with contaminated groundwater would not be expected to occur.

Direct Effects Due to Operations

The proposed facility would be subject to Utah's general multi-sector permit rule for stormwater compliance. The *Hill AFB Stormwater Management Plan - Municipal Stormwater Permit* establishes good housekeeping measures and other best management practices to prevent contamination of runoff.

Indirect Effects

A wellhead protection zone exists in the vicinity of the proposed action. Design and construction would be conducted in accordance with requirements stated in the applicable Hill AFB wellhead protection plan.

During scoping and the detailed analysis, no other indirect effects related to water quality were identified for the proposed action.

Cumulative Effects

On-base and off-base water quality would be protected during and after construction activities. There would be no significant cumulative water quality effects associated with the proposed action.

4.3 Summary Comparison of Predicted Environmental Effects

Issue	Alternative A No Action	Alternative B Proposed Action
Air Quality	No new effects. However, negative effects on air quality would continue, due to emissions from the trucks hauling the seats and canopies back and forth across the runway.	Construction equipment would create temporary emissions. Fugitive dust emissions would be controlled. Air emissions from the natural gas fired furnace would 0.1 tons per year or less for each criteria pollutant and for HAPs.
Solid and Hazardous Waste	No new effects	If contaminated soils are identified, they would be properly handled during the construction process. Operational activities would not generate any solid or hazardous wastes.
Biological Resources	The site would remain in its current, somewhat degraded, condition. Existing human activities, such as periodic mowing and operation of adjacent facilities, would continue in the area.	The proposed action would reduce available forage for birds and displace rodents. Without best management practices, construction activities would increase the chance of introducing additional invasive species. If any protected nesting birds should exist adjacent to construction activities, a certificate of registration would have to be obtained. Restoration planting (of any areas not occupied by structures, pavements, or irrigated turf) would include fire resistant plants, native grasses, and native shrubs. Because of proximity to the Hill AFB runway, design and construction would discourage increased bird activity.
Water Quality	No new effects	Under proposed regulations, a construction stormwater permit would be required if the proposed action is part of a larger planned development. During construction and operations, water quality would be protected by implementing stormwater management practices. Predevelopment hydrologic characteristics would be preserved.

Table 6: Summary Comparison of Predicted Environmental Effects

5.0 LIST OF PREPARERS

Streamline Consulting, LLC
1713 N. Sweetwater Lane, Farmington UT 84025
(801) 451-7872
Randal B. Klein, P.E., Project Manager

Civil Engineer Group, Environmental Division, 75 CEG/CEV
7274 Wardleigh Road, Hill AFB UT 84056
Kay Winn, NEPA Manager, (801) 777-0383

Select Engineering Services
1544 N. Woodland Park Drive, Suite 310, Layton UT 84041
Rudy Jones, Biologist, (801) 399-1858

EMAssist, Inc.
7274 Wardleigh Road, Hill AFB UT 84056
Mark Kaschmitter, Air Regulatory Analysis, (801) 775-2359

6.0 LIST OF PERSONS AND AGENCIES CONSULTED

Civil Engineer Group, Environmental Division, 75 CEG/CEV
7274 Wardleigh Road, Hill AFB UT 84056
Kay Winn, NEPA Manager, (801) 777-0383
Jaynie Hirschi, Archaeologist, (801) 775-6920
Marcus Blood, Natural Resources Manager, (801) 777-4618
Russ Lawrence, Wildlife/Habitat Biologist, (801) 777-6972
Mike Petersen, Water Quality Manager, (801) 775-6904
Shannon Smith, Environmental Restoration Project Manager, (801) 775-6913

Civil Engineer Group, 75 CEG
5713 Lahm Lane, Building 593N, Hill AFB UT 84056
Steven Weed, MILCON Project Programmer, (801) 777-2580
Marc David, Facility Program Manager, (801) 777-2794

Maintenance Support Squadron, 309 MXSS
5840 Engine Lane, Hill AFB UT 84056
Kent McFarland, (801) 586-4767

Aircraft Maintenance Group, 309 AMXG
5832 H Avenue, Hill AFB UT 84056
Dave Gange, Lead Facility Engineer, (801) 777-6363

Weapons Safety, 75 ABW/SEW
7290 Weiner Street, Hill AFB UT 84056
Paul Kracht, Weapons Safety Manager, (801) 777-1431

7.0 REFERENCES

CFR: *Code of Federal Regulations,* US Government Printing Office, Office of the Federal Register (various sections and dates).

DAQ 2007: "*Utah's Area Designation Recommendation for the 2006 PM2.5 NAAQS*", Utah Division of Air Quality, December, 2007.

DAQ 2009a: *State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance (Updated July 2006),* Utah Division of Air Quality Website, February, 2009.

DAQ 2009b: *Division of Air Quality Annual Report for 2008,* Utah Division of Air Quality, January, 2009.

Economic 2008: *Utah Labor Force: (Section 5 of the Utah Business & Economic Profile),* Economic Development Corporation of Utah, January 31, 2008.

EPA 1991: *Nonroad Engine and Vehicle Emission Study - Report,* Table 2-07a, US Environmental Protection Agency, 1991.

EPA 1998: *National Air Pollutant Emission Trends, Procedures Document for 1900-1996,* US Environmental Protection Agency, Page 4-285, 1996.

Hill AFB: *Construction Specifications, Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection,* Hill AFB, UT, current version.

Hill 2007a: *Integrated Cultural Resources Management Plan,* Hill AFB, 2007.

Hill 2007b: *Integrated Natural Resources Management Plan,* Hill AFB, 2007.

Hill 2009: *2008 Annual Criteria and Toxic Pollutant Emission Inventory,* Hill AFB, November, 2009.

Stantec 2007: *Hill AFB Stormwater Management Plan - Municipal Stormwater Permit,* Stantec Consulting, April, 2007.

WFRC 2003: *Natural Hazard Pre-Disaster Mitigation Plan, Utah's Wasatch Front,* Wasatch Front Regional Council, December 2003.

APPENDIX A

CULTURAL RESOURCES FINDING OF NO ADVERSE EFFECT

State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of Community and Culture

PALMER DePAULIS
Executive Director

State History

PHILIP F. NOTARIANNI
Division Director

November 30, 2009

Ms Jaynie Hirschi
Archaeologist
75th CEG/CEVOR
7274 Wardleigh Road
Hill Air Force Base UT 84056-5137

RE: Proposed F-22 Staging Building, Hill Air Force Base, Utah

In Reply Please Refer to Case No. 09-1592

Dear Ms. Hirschi: Jaynie

The Utah State Historic Preservation Office received your request for our comment on the above-referenced project on November 23, 2009.

USHPO recommends a determination of **No Historic Properties Affected**, 36 CFR 800.4(d)(1), rather than a determination of No Adverse Effect.

This letter serves as our comment on the determinations you have made, within the consultation process specified in §36CFR800.4. If you have questions, please contact me at 801-533-3555 or Lhunsaker@utah.gov or contact Jim Dykmann at 801-533-3523 or Jdykman@utah.gov

Sincerely,

Lori Hunsaker
Deputy State Historic Preservation Officer - Archaeology

DEPARTMENT OF THE AIR FORCE
75TH CIVIL ENGINEER GROUP (AFMC)
HILL AIR FORCE BASE UTAH

3 November 2009

Mr. Robert T. Elliott
Chief, Environmental Management Division
75 CEG/CEV
7274 Wardleigh Road
Hill Air Force Base, Utah 84056-5137

Ms. Lori Hunsaker
State Historic Preservation Officer
300 Rio Grande
Salt Lake City, Utah 84101

Dear Ms. Hunsaker

Hill Air Force Base (AFB) is currently proposing to construct a staging area for storage related to current and future workloads associated with F-22 aircraft. There is currently no existing building in the vicinity of the F-22 maintenance activities that can provide the required storage space. Situating F-22 maintenance and storage facilities within the same vicinity would improve base safety, increase efficiency, and reduce work time. The Area of Potential Effect (APE) is approximately 342 acres (Attachment 1, Area of Potential Effects for the Proposed F-22 Staging Building, Hill Air Force Base, Utah).

Within Hill AFB, three previous inventories have comprised cultural resources survey of 840 acres (U-91-WC-687m, U-95-WC-280p, and U-01-HL-0164m). Results from these projects include the recordation of one historic refuse dump (42Dv51) and two prehistoric isolates, all determined ineligible for listing in the NRHP. Inventory efforts have resulted in the survey of 12.5 percent of the total area of Hill AFB. None of the previous inventories fall within the APE of the current proposed project.

A final location for the proposed staging area has not yet been determined, but will fall within the APE. Given the lack of previous findings, the potential for archaeological historic properties is extremely low; however, if any archaeological resources are found during construction, ground-disturbing activities in the immediate vicinity will cease, the Hill AFB Cultural Resources Program will be notified, and the unanticipated discovery of archaeological deposits procedures shall be implemented with direction from the Hill AFB Cultural Resources Program and in accordance with the Hill AFB Integrated Cultural Resources Management Plan (Attachment 2, Unanticipated Discovery of Archaeological Deposits).

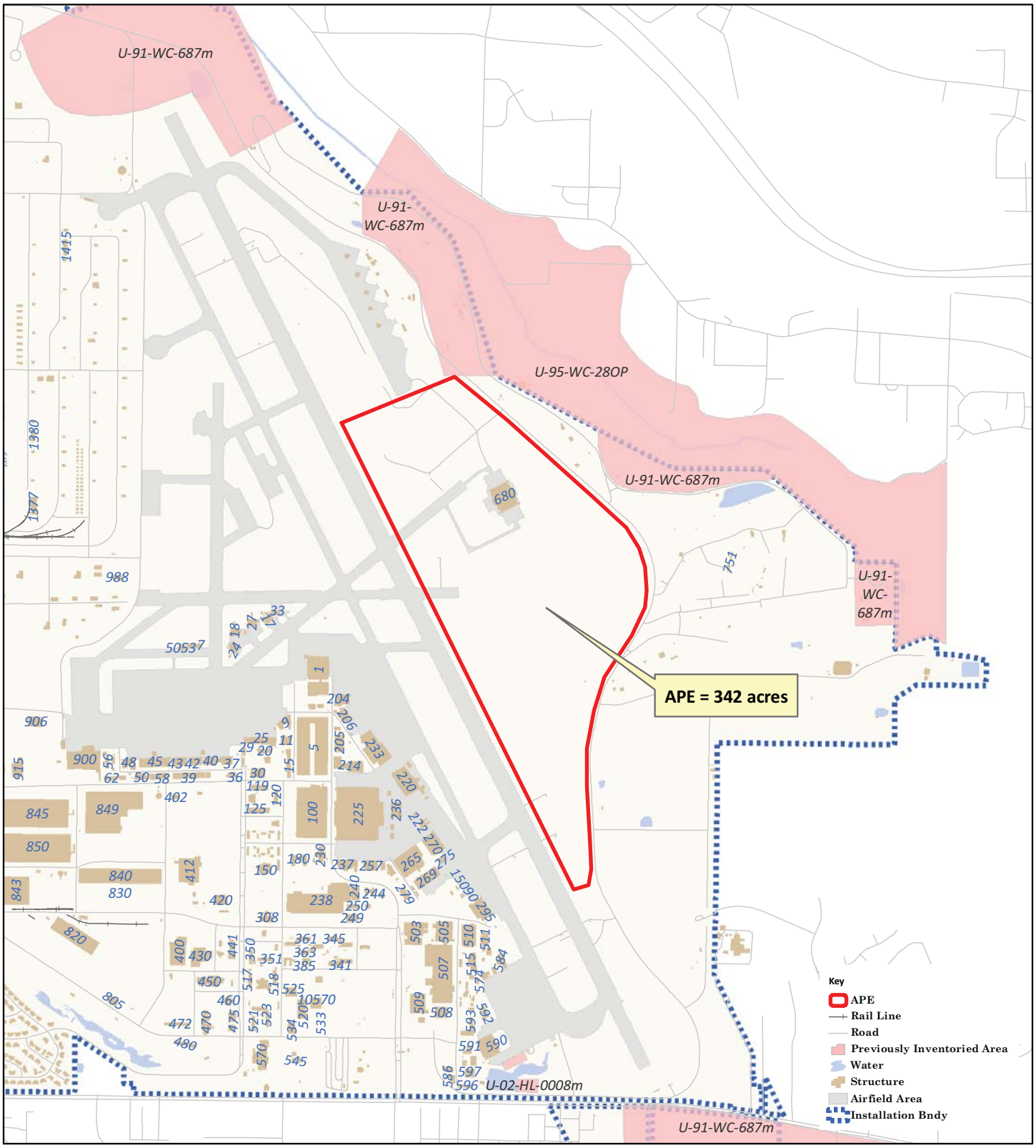
Hill AFB has determined the proposed project will have no adverse effect to historic properties [36 CFR §800.4(d)(1)]. I request your concurrence in these determinations as specified in 36 CFR §800.

Should you or your staff have any questions about the project, please contact our archaeologist, Ms. Jaynie Hirschi, 75th CEG/CEVOR, at (801) 775-6920 or at jaynie.hirschi@hill.af.mil.

Sincerely

ROBERT T. ELLIOTT, P.E., YF-02, DAF
Chief, Environmental Management Division
75th Civil Engineer Group

Attachments:
1. Area of Potential Effects for the Proposed F-22 Staging Building, Hill Air Force Base, Utah
2. Unanticipated Discovery of Archaeological Deposits



Area of Potential Effects for the Proposed F-22 Staging Building Hill Air Force Base, Utah

1: 24,000

0 250 500 1,000 Meters

0 1,000 2,000 4,000 Feet

N

Standard Operating Procedure

UNANTICIPATED DISCOVERY OF ARCHAEOLOGICAL DEPOSITS

APPLICABLE LAWS AND REGULATIONS

- National Historic Preservation Act
- National Environmental Policy Act
- Native American Graves Protection and Repatriation Act
- AFI 32–7065 (June 2004), *Cultural Resources Management Program*

OVERVIEW

All undertakings that disturb the ground surface have the potential to discover buried and previously unknown archaeological deposits. The accidental discoveries of archaeological deposits during an undertaking can include but are not limited to:

- Undiscovered/undocumented structural and engineering features; and
- Undiscovered/undocumented archaeological resources such as foundation remains, burials, artifacts, or other evidence of human occupation.

POLICY

When cultural resources are discovered during the construction of any undertaking or ground-disturbing activities, Hill AFB shall:

- Evaluate such deposits for NRHP eligibility.
- Treat the site as potentially eligible and avoid the site insofar as possible until an NRHP eligibility determination is made.
- Make reasonable efforts to minimize harm to the property until the Section 106 process is completed.
- **The BHPO will ensure that the provisions of NAGPRA are implemented first if any unanticipated discovery includes human remains, funerary objects, or American Indian sacred objects (see SOP #6).**

PROCEDURE

Step 1: Work shall cease in the area of the discovery (Figure 5-5). Work may continue in other areas.

- The property is to be treated as eligible and avoided until an eligibility determination is made. Hill AFB will continue to make reasonable efforts to avoid or minimize harm to

Further construction activities in the vicinity of the site will be suspended until an agreed-upon testing strategy has been carried out and sufficient data have been gathered to allow a determination of eligibility. The size of the area in which work should be stopped shall be determined in consultation with the **BHPO**.

the property until the Section 106 process is completed.

Step 2: Immediately following the discovery, the **Project Manager** shall notify the installation **BHPO**.

Step 3: The **BHPO** or a professional archaeologist shall make a field evaluation of the context of the deposit and its probable age and significance, record the findings in writing, and document with appropriate photographs and drawings.

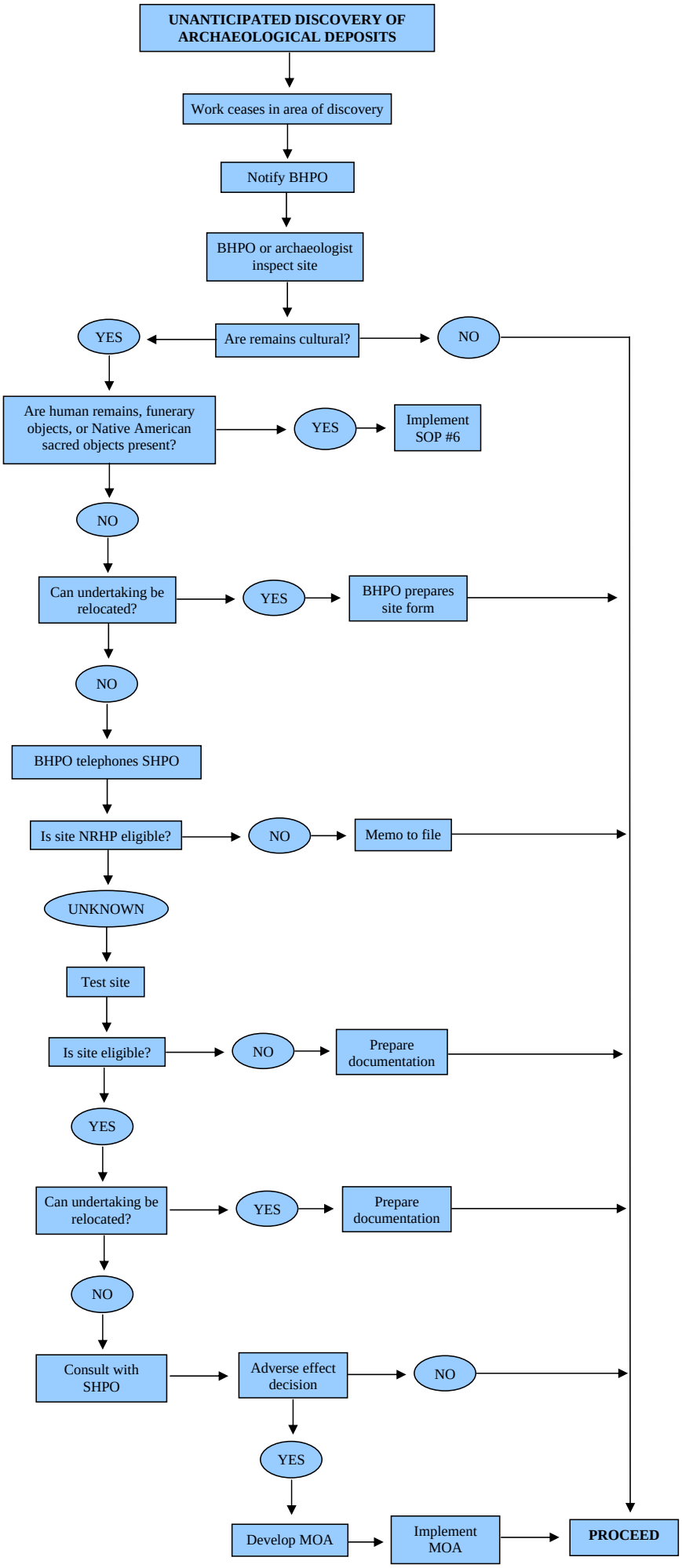
- If disturbance of the deposits is minimal and the excavation can be relocated to avoid the site, the **BHPO** will file appropriate site forms in a routine manner.
- If the excavation cannot be relocated, the **BHPO** shall notify the office of the **SHPO** to report the discovery and to initiate an expedited consultation.

The Section 106 review process is initiated at this point.

- If the deposits are determined to be ineligible for inclusion in the NRHP, then Hill AFB **BHPO** will prepare a memorandum for record and the construction may proceed.
- If the existing information is inadequate for an NRHP eligibility determination, Hill AFB **BHPO** shall develop an emergency testing plan in coordination with the SHPO.

Step 4: Hill AFB shall have qualified personnel conduct test excavations of the deposits to determine NRHP eligibility.

- Hill AFB BHPO, in consultation with the SHPO, will determine appropriate methodology for NRHP eligibility determination.
- If the SHPO and Hill AFB agree that the deposits are ineligible for inclusion in the NRHP, then work on the undertaking may proceed.
- If the deposits appear to be eligible, or Hill AFB and the SHPO cannot agree on the question of eligibility, then Hill AFB shall implement alternative actions, depending on the urgency of the proposed action.
  - Hill AFB may relocate the project to avoid the adverse effect.
  - Hill AFB may request the Keeper of the National Register to provide a determination.
  - Hill AFB may proceed with a data recovery plan under a MOA developed in coordination with the SHPO and possibly the ACHP and interested parties.
  - **Hill AFB may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking on the property to the extent feasible and the comments of the SHPO, ACHP, and interested parties. Interim comments must be provided to Hill AFB within 48 hours; final comments must be provided within 30 days.**


UNANTICIPATED DISCOVERY OF ARCHAEOLOGICAL DEPOSITS
Work ceases in area of discovery
Notify BHPO
BHPO or archaeologist inspect site
Are remains cultural?
YES
NO
Are human remains, funerary objects, or Native American sacred objects present?
YES
Implement SOP #6
NO
Can undertaking be relocated?
YES
BHPO prepares site form
NO
BHPO telephones SHPO
Is site NRHP eligible?
NO
Memo to file
UNKNOWN
Test site
Is site eligible?
NO
Prepare documentation
YES
Can undertaking be relocated?
YES
Prepare documentation
NO
Consult with SHPO
Adverse effect decision
NO
YES
Develop MOA
Implement MOA
PROCEED

FINDING OF NO SIGNIFICANT IMPACT

1. NAME OF ACTION: Provide an improved Seat and Canopy Staging Building at Hill Air Force Base (AFB), Utah.

2. DESCRIPTION OF THE PROPOSED ACTION: Hill AFB proposes to accommodate current United States Air Force (USAF) missions by providing an adequately sized seat and canopy staging building in which seats and canopies from F-22 aircraft can be safely and efficiently stored while the aircraft are being repaired . The proposed action would be located east of the Hill AFB runway.

3. SELECTION CRITERIA: The following criteria were used to assemble alternatives.

The building that provides F-22 seat and canopy staging capabilities on Hill AFB should:

- provide a minimum of 2,500 square feet of storage space to accommodate seats and canopies for current and future F-22 workloads;
- have 210 feet of available clearance from other structures due to explosive clear zone (ECZ) standards (related to ejection seat and canopy explosive charges);
- do not conflict with establishing a possible future runway (east of the existing runway);
- do not degrade the function of existing radar systems;
- be located in close proximity to existing F-22 maintenance facilities
  - for public safety, eliminate risk to occupants of privately-owned vehicles from colliding with military vehicles transporting explosives
  - for efficiency, be in close proximity to F-22 maintenance facilities and existing utilities; and
- be protective of facilities, human health, and the environment.

4. ALTERNATIVES CONSIDERED OTHER THAN THE PROPOSED ACTION:

Under the no action alternative, the seat and canopy staging building would not be constructed. Seats and canopies for F-22 aircraft would be staged in Buildings 223 and 236, across the runway. Undesirable safety, efficiency, and work flow time issues would exist.

Using or remodeling an existing Hill AFB facility was considered and eliminated by the Hill AFB planners and engineers. All existing buildings on the east side of the runway are fully committed to US Air Force workloads assigned to Hill AFB aircraft maintenance squadrons.

Hill AFB planners and engineers considered other potential locations for the seat and canopy staging building. Potential locations west of the Hill AFB runway would not meet the selection criteria for public safety or proximity to F-22 maintenance facilities.

5. SUMMARY OF ANTICIPATED ENVIRONMENTAL EFFECTS:

Issue	Alternative A No Action	Alternative B Proposed Action
Air Quality	No new effects. However, negative effects on air quality would continue, due to emissions from the trucks hauling the seats and canopies back and forth across the runway.	Construction equipment would create temporary emissions. Fugitive dust emissions would be controlled. Air emissions from the natural gas fired furnace would 0.1 tons per year or less for each criteria pollutant and for hazardous air pollutants (HAPs).
Solid and Hazardous Waste	No new effects	If contaminated soils are identified, they would be properly handled during the construction process. Operational activities would not generate any solid or hazardous wastes.
Biological Resources	The site would remain in its current, somewhat degraded, condition. Existing human activities, such as periodic mowing and operation of adjacent facilities, would continue in the area.	The proposed action would reduce available forage for birds and displace rodents. Without best management practices, construction activities would increase the chance of introducing additional invasive species. If any protected nesting birds should exist adjacent to construction activities, a certificate of registration would have to be obtained. Restoration planting (of any areas not occupied by structures, pavements, or irrigated turf) would include fire resistant plants, native grasses, and native shrubs. Because of proximity to the Hill AFB runway, design and construction would discourage increased bird activity.
Water Quality	No new effects	During construction and operations, water quality would be protected by implementing stormwater management practices. Predevelopment hydrologic characteristics would be preserved.

6. FINDING OF NO SIGNIFICANT IMPACT: Based on the above considerations, a Finding of No Significant Impact (FONSI) is appropriate for this assessment.

Approved by: _____ Date: 25 Mar 10

HARRY BRIESMASTER III, YF-03, DAF
Director, 75th Civil Engineer Group